

Title of the abstract: In-situ monitoring of high doses of radiation

According to the today's state of art, high-doses of radiation (above 10 kGy) may be estimated post factum by family of passive thermo-, radio- and photoluminescence indicators or hydrogen pressure dosimeters but in situ measurements have been up-to-day obtained only for low or medium doses (below 10 kGy) by solid-state MOS based sensors. So, the problem of high-dose radiation measurements is still open and important.

Nuclear power plants or particle accelerators are more powerful. In consequence, interacting with the radiation dose and the construction and shell materials are also significantly higher. It is well known, that interaction of high-dose of radiation with materials results in damage to the materials. However, these lesions are usually invisible or impossible to detect due to the high radiation environment in which they are located.

New MEMS sensor for detection of high doses (above 10 kGy) of radiation will be presented as an excellent method for the continuous in-situ monitoring of the radiation dose absorbed by the material.